

We claim:

1. A device for inserting an intraocular lens into a mammalian recipient's eye, comprising:
 - (a) a removable lens carrier comprising an encasement chamber having a distal end and a proximal end, and a pair of guides for holding the intraocular lens;
 - (b) an insertion tube comprising a loading port having first and second chambers adapted to communicate with each other, and to converge to form an ejection port having a guide ridge;
 - (c) a loading carriage comprising a docking platform and a removable loading carriage cover having a lens depressor; wherein the size and shape of said docking platform are adapted to complement those of said removable lens carrier, such that said removable lens carrier may be securely fastened onto said docking platform with said proximal end of said encasement chamber positioned adjacent to said loading port; wherein said lens depressor and said guides are sized and shaped to allow for said lens depressor to press the intraocular lens between said guides to align the intraocular lens with said first and second chambers; and
 - (d) a plunger comprising a handle, a plunger support, and a rod having a tip adapted to advance the intraocular lens towards said ejection port to allow for said guide ridge to controllably orient the intraocular lens and guide the lens into the eye.

2. A device as recited in Claim 1, wherein said first chamber comprises a receiving chamber, and wherein said second chamber comprises a guide chamber; wherein when pressure is applied to said handle, the loaded intraocular lens is advanced towards said ejection port; wherein said guide chamber pushes the side of the intraocular lens contained therein towards said receiving chamber, causing the loaded intraocular lens to controllably roll onto itself in said receiving chamber as it traverses towards said ejection port; wherein the intraocular lens comprises a leading haptic and a trailing haptic; and wherein said guide ridge controllably orients the rolled intraocular lens and guides the lens into the eye with the leading haptic entering the eye first.

3. A device as recited in Claim 1, wherein said first chamber comprises a first receiving chamber, and wherein said second chamber comprises a second receiving chamber; wherein when pressure is applied to said handle, the loaded intraocular lens is advanced towards said ejection port; wherein said receiving chambers roll both sides of the lens at varying degrees such that one side of the intraocular lens encircles the other side of the intraocular lens, causing the loaded intraocular lens to roll controllably onto itself as it reaches said ejection port; wherein the intraocular lens comprises a leading haptic and a trailing haptic; and wherein said guide ridge controllably orients the rolled intraocular lens and guides the lens into the eye with the leading haptic entering the eye first.

4. A device as recited in Claim 1, wherein said insertion tube is conical.

5. A device as recited in Claim 1, wherein said plunger support is sized and shaped to support said rod and to allow said tip to engage the intraocular lens and to advance the lens through said insertion tube.

6. A device as recited in Claim 1, wherein said plunger support and said rod have threads sized and shaped to complement each other, such that said rod may be slowly advanced by turning said plunger support until said rod engages the loaded intraocular lens and pushes the intraocular lens into said loading port.

7. A device as recited in Claim 1, wherein said ejection chamber has a diameter sized to roll the loaded intraocular lens to a diameter of about 2.6 mm as the lens exits through said ejection port.

8. A device as recited in Claim 1, wherein said removable lens carrier additionally comprises a removable cover for storing a loaded intraocular lens in said removable loading carriage.

9. A device as recited in Claim 1, additionally comprising a loaded intraocular lens pressed between said guides and aligned with said left chamber and said right chamber for insertion into the recipient's eye.

10. A method for inserting an intraocular lens into a mammalian recipient's eye from which the natural lens has been removed; said method comprising the steps of:

(a) loading an intraocular lens having an optic and a leading haptic and a trailing haptic into a device as recited in Claim 1;

(b) rolling the intraocular lens tightly onto itself by pushing the intraocular lens through the insertion tube; and

(c) placing the ejection port into a small incision in the eye and advancing the tightly rolled intraocular lens into the eye.

11. A method as recited in Claim 10, wherein the insertion tube is conical.

12. A method as recited in Claim 10, wherein the plunger support and the rod have threads sized and shaped to complement each other, such that the rod may be slowly advanced by turning the plunger support until the rod engages the loaded intraocular lens and advances it into the loading port.

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13. A method as recited in Claim 10, wherein the small incision is preferably about 2.4-3.0 mm long, most preferably about 2.6 mm.
14. A method as recited in Claim 10, wherein the ejection chamber has a diameter sized to roll the loaded intraocular lens to a diameter of about 2.6 mm as it exits through the ejection port.
15. A method as recited in Claim 10, wherein the removable lens carrier additionally comprises a removable cover for securing a loaded intraocular lens in the removable loading carriage when the loaded intraocular lens is not immediately injected into a mammalian recipient's eye.
16. A method as recited in Claim 10, wherein the intraocular lens is loaded into the removable lens carrier by placing the intraocular lens on top of said guides in a flat position with the optic facing upward, the leading haptic extending towards the proximal end of the encasement chamber and trailing haptic extending towards the distal end of the encasement chamber.
17. A method as recited in Claim 10, wherein the recipient is a human.